

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
**(PCT Article 36 and Rule 70)**

Applicant's or agent's file reference WOP0270C	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03142	International filing date (day/month/year) 18.07.2003	Priority date (day/month/year) 09.08.2002
International Patent Classification (IPC) or both national classification and IPC A47L5/28		
Applicant DYSON LTD et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
  - This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.
3. This report contains indications relating to the following items:
  - I  Basis of the opinion
  - II  Priority
  - III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV  Lack of unity of invention
  - V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI  Certain documents cited
  - VII  Certain defects in the international application
  - VIII  Certain observations on the international application

Date of submission of the demand 05.03.2004	Date of completion of this report 22.10.2004
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Lodato, A Telephone No. +49 89 2399-8037



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/03142

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1, 2, 4-22 as originally filed  
3 received on 05.10.2004 with letter of 30.09.2004

**Claims, Numbers**

7-36 as originally filed  
1-6 received on 05.10.2004 with letter of 30.09.2004

**Drawings, Sheets**

1/13-13/13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages:  
 the claims, Nos.:  
 the drawings, sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*
6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
  - the entire international application,
  - claims Nos. 35  
because:
    - the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
    - the description, claims or drawings (*Indicate particular elements below*) or said claims Nos. 35 are so unclear that no meaningful opinion could be formed (*specify*):  
**see separate sheet**
      - the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
      - no international search report has been established for the said claims Nos. 35
2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:
  - the written form has not been furnished or does not comply with the Standard.
  - the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-34, 36
	No: Claims	
Inventive step (IS)	Yes: Claims	1-34, 36
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-34, 36
	No: Claims	

2. Citations and explanations

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see separate sheet

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Claim 35 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter by a reference to the drawings. All the claims should specify clearly all of the essential features needed to define the invention.

Furthermore, the above-mentioned lack of clarity notwithstanding, claim 35 is considered by this Authority to be covered by the provisions of Rule 66.1(e) PCT. Consequently, no opinion will be formulated with respect to novelty, inventive step and industrial applicability of the subject-matter of this claim.

**Re Item V**

**Reasoned statement under with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: US-A-5 323 510 (COLLINS MICHAEL D ET AL) 28 June 1994 (1994-06-28)

2. The document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1 and discloses (see description column 2, lines 4-38; column 3, lines 17-30; figures 1, 6-10):  
A surface treating appliance (10) comprising a handle (24) having a longitudinal axis, a surface treating head (12), a support assembly (18) which is attached to the handle and arranged to roll with respect to the handle for allowing the appliance to be rolled along a surface, and a linkage (40) between the handle and the surface treating head, the linkage being arranged such that rotating the handle about its longitudinal axis causes the surface treating head to turn in a new direction.
3. The subject-matter of claim 1 differs from the disclosure of D1 in that:
  - i) when the handle rotates (twists) about its longitudinal axis, the support assembly also rotates (twists) around the same axis.
4. The object of the invention is to provide a surface treating appliance with a more responsive steering mechanism. This object is achieved by the technical features of independent claim 1.

5. With respect to feature i), by fixing the rotational axis of the support assembly perpendicular to the handle, so that twisting the handle about its longitudinal axis the support assembly also twists around the same axis (in the manner of a corkscrew), if the user wishes the surface-treating head to point in a new direction, he has only to twist the handle about its longitudinal axis without being necessary to push or pulled the appliance along the floor surface.
6. Document D1 discloses a surface treating appliance, wherein by twisting the handle around its longitudinal axis the surface-treating head can be turn in a new direction, but with the linkage of D1 it is necessary to push or pull the appliance along the floor surface in order to turn the surface-treating head. Therefore, the alternative provided by the technical feature i) is not indicated or suggested therein.
7. Therefore a surface treating appliance according to claim 1 is not disclosed or suggested in the available prior art.
8. **Claim 1** meets the requirements of the PCT with respect to novelty and inventive step (Article 32(2) and 33(3) PCT). **Claims 2-34 and 36** are depending from claim 1 and as such also meet the requirements of Article 32(2) and 33(3) PCT.

The invention provides a surface treating appliance comprising a handle having a longitudinal axis, a surface treating head, a support assembly which is attached to the handle and arranged to roll with respect to the handle for allowing the appliance to be rolled along a surface, and a linkage between the handle and the surface treating head, the linkage being arranged such that rotating the support assembly and the handle about the longitudinal axis causes the surface treating head to turn in a new direction.

5 The linkage being arranged such that rotating the support assembly and the handle about the longitudinal axis causes the surface treating head to turn in a new direction.

The provision of a rolling support surface and a linkage which allows the handle to be rotated or twisted about its longitudinal axis, in the manner of a corkscrew, improves 10 manoeuvrability and ensures a smooth transition between the forward running and turning positions. Thus, the usability of the appliance is improved.

15 Preferably a joint is provided between the handle and the cleaner head, which joint may be lockable in order to prevent the cleaner head from turning when the appliance is in an upright position. This feature provides stability to the appliance when it is stationary.

The main body of the appliance may be carried on the handle, as in an upright vacuum cleaner or stick vac. Alternatively, the main body may be located elsewhere and the invention may be used in the manner of a floor tool.

20 Advantageously, the support assembly is arranged so that the diameter of the central portion is greater than that of the end portions, so that the outer surface has a spherical or barrel shape. This greater facilitates the user in turning the appliance in a new direction. The support assembly may house one or more components of the appliance.

25 The term "surface treating appliance" is intended to have a broad meaning, and includes a wide range of machines having a head for travelling over a surface to clean or treat the surface in some manner. It includes, *inter alia*, machines which apply suction to the surface so as to draw material from it, such as vacuum cleaners (dry, wet and wet/dry), as well as 30 machines which apply material to the surface, such as polishing/waxing machines, pressure washing machines, ground marking machines and shampooing machines. It also includes lawn mowers and other cutting machines.

Claims

1. A surface treating appliance comprising a handle having a longitudinal axis, a surface treating head, a support assembly which is attached to the handle and arranged to roll with respect to the handle for allowing the appliance to be rolled along a surface, and a linkage between the handle and the surface treating head, the linkage being arranged such that rotating the support assembly and the handle about the longitudinal axis causes the surface treating head to turn in a new direction.
2. An appliance according to claim 2 wherein the linkage is also arranged to allow the surface treating head to remain substantially in contact with the surface as the handle is rotated about its longitudinal axis.
3. An appliance according to claim 1 or 2 wherein the end portion of the linkage nearest the surface treating head comprises a pivotable connection between the linkage and the surface treating head.
4. An appliance according to any preceding claim wherein the end portion of the linkage nearest the handle comprises a pivotable connection between the linkage and the handle.
5. An appliance according to claim 4 wherein the pivotable connection to the handle is substantially aligned with the rotational axis of the support assembly.
6. An appliance according to claim 5 wherein the linkage comprises a yoke, at least one end portion of which has a pivotable connection to the handle that is substantially aligned with the rotational axis of the support assembly.